

REMARKS

Claims 1-11 and 13-25 are pending in this application. Claims 15 and 26-28 have been allowed in the referenced Office Action.

The drawings stand objected to for failure to comply with 37 CFR 1.83(a). A proposed change to the drawings to correct this discrepancy is being provided. Specifically, Figure 2 has been renumbered as Figure 2A, and Figure 2B is being added to show the transverse holes. Support for this change is provided in the Specification at, for example, p. 5, lines 6-7, which describe substrates (*i.e.* “webs”), having holes with diameters that range from about 0.01 inch to 0.25 inch. It is inherent that the holes are transverse a longitudinal axis of the substrate, as apparent from Fig. 2A. The specification has been amended to reference the new drawing.

With the present Amendment, independent Claims 1, 16 and 21 have been amended to incorporate the limitation of a “trough,” located in the printing section, which collects ink that falls through holes in the substrate. In view of these amendments, Claim 12 has been cancelled, and Claims 13, 14 and 20 have been amended to be consistent with their respective base claims. For the following reasons, it is believed that all claims are now allowable.

First, independent Claim 1 has been amended to recite a printing system comprising, *inter alia*, a web guide having a “preprinting section,” a “postprinting section,” and a “printing section.” The preprinting section guides a substrate having a plurality of holes into the printing system, and the postprinting section maintains tension in the substrate as it moves through the system. The printing section includes a “removable platen” which provides a gap in the printing section to prevent excess ink which falls through the holes of the substrate from accumulating on the platen and transferring to the underside of a substrate, and a “trough” within the gap that collects excess ink that falls through the holes in the substrate.

It is respectfully submitted that the invention recited in Claim 1 and its dependents, Claims 2-11, 13 and 14, is patentably distinct from the prior art of record. In particular, the printing system of Claim 1 is not taught or suggested by the Sugimoto reference (JP 5-84991), which is the principal reference cited by the Examiner in rejecting Claims 1-14. The Sugimoto patent discusses an ink jet printer which has an optical sensor 42 for identifying the type of recording medium in the printer, and based upon this identification, adjusts the heat provided to

the recording medium by moving a heated platen 40 towards or away from the recording medium. Sugimoto describes printing on either plain paper or "OHP film," but significantly does not teach or suggest printing on "a substrate having a plurality of holes," as recited in Claims 1-11, 13 and 14. In fact, the system Sugimoto would be ineffective for printing on such substrates, since a substantial portion of the excess ink which falls through the holes of the substrate would accumulate on the platen 40, even when the platen is in the partially-retracted position, as shown in Fig. 3. This ink would then be undesirably transferred from the platen to the underside of the substrate, or a subsequent substrate, whenever the solenoid valve 68 moves the platen 40 upwards to apply larger quantities of heat. By contrast, the present invention provides a "removable platen," such as shown in Figs. 5 and 6, in order to provide a gap in the printing section to prevent excess ink which falls through the holes of the substrate from accumulating on the platen and transferring to the underside of a substrate.

The invention of Claims 1-11, 13 and 14 also recites a "trough" within the gap for collecting excess ink that falls through the holes in the substrate. The applicants respectfully disagree with the Examiner's assertion that Sugimoto teaches the "trough" of amended Claim 1 (and previously recited in Claim 12), since Sugimoto discloses no mechanism which could collect any excess ink which falls through holes in the substrate. Indeed, any excess ink would simply fall onto the platen or into the internal mechanism of the printing system, fouling the system and potentially rendering it inoperable. For these reasons, the applicants respectfully submit that the system of Claims 1-14 is patentably over the teachings of Sugimoto.

Moreover, since the deficiencies with respect to the Sugimoto reference are not taught or suggested by the secondary references (*i.e.*, Moore *et al.*, Wotton *et al.*, Erickson *et al.*, Koyama *et al.*, Spehrley *et al.*, and Akaha), is it believed that Claim 1 and its dependents, Claims 2-11 and 13-14, are all allowable.

Independent Claim 16 recites a method of guiding a substrate through a printing system, where the substrate has openings extending transverse a longitudinal axis of the substrate. The method comprises guiding the substrate through a preprinting section; moving the substrate through a printing section of the printing system wherein ink is deposited on the substrate, and applying a vacuum to the substrate to minimize wrinkling of the substrate; collecting ink that

falls through the openings of the substrate in a trough located within a gap in the printing section; and applying a tension to the substrate as the substrate moves through the printing system.

The Examiner's rejections of this claim are overcome, since the cited references, considered alone or in combination, fail to teach or suggest the claimed method. In rejecting this claim, the Examiner asserts that the method of guiding the substrate as claimed is disclosed in the Rhodes patent (US 6,328,439), or in a combination of the Sugimoto patent and the Morita patent (JP 5-131620), and a substrate having openings extending transverse a longitudinal axis of the substrate is disclosed in Onishi (US 6,173,649). However, these rejections are deficient, because the methods disclosed in Sugimoto, Rhodes and Morita are incompatible with a substrate as presently claimed, and one of ordinary skill would not be motivated or suggested to make the combination of elements proposed by the Examiner.

Specifically, as discussed above, Sugimoto does not teach or suggest "collecting ink that falls through the openings of the substrate in a trough located within a gap in the printing section," and instead teaches a method whereby the excess ink simply falls onto the platen or into the internal mechanism of the printing system.

Similarly, Rhodes does not teach the step of collecting ink in a trough, nor does Rhodes even teach or suggest providing a "gap in the printing section." Instead, Rhodes teaches a platen 36 that is adjacent to the transport belt 32 and the paper substrate 16 in the printing section, such that if the method of Rhodes were somehow modified to print on a substrate having transverse openings, as proposed by the Examiner, the excess ink would not be collected in a trough, but would foul the transport belt and platen, and would be undesirably transferred to the underside of the substrate. Morita discloses a similar printing system which would not be effective for the method of the present claims. Accordingly, it is believed that Claim 16 and its dependents, Claims 17-20, should be allowed.

Finally, independent Claim 21 recites a method of guiding a printable substrate through a printing system wherein the substrate is formed with plural openings transverse a longitudinal axis of the substrate. The method comprises guiding the substrate through a preprinting section of the printing system; providing a gap in a printing section of the printing system by removing a platen member from said printing section; moving the substrate over the gap of the printing section of the printing system, the gap minimizing excess ink which is deposited on the substrate

from accumulating through said openings and forming underneath the substrate; and collecting ink that falls through the openings of the substrate in a trough located within the gap. Neither of the references cited by the Examiner in rejecting Claim 21, Akaha (JP 2000-351205) or Onishi, teach or suggest "providing a gap in a printing section of the printing system by removing a platen member from said printing section," or "collecting ink that falls through the openings of the substrate in a trough located within the gap." Accordingly, Claim 21 and its dependents, Claims 22-25, should be allowed.

CONCLUSION

Applicants have carefully considered the Examiners reasons for rejection and the prior art cited, and has amended the claims where appropriate to avoid such art. Applicants respectfully request that the pending claims be allowed and the case be passed to issuance. The Examiner's allowance of Claims 15 and 26-28, and the reasons therefor, is noted with appreciation. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned at (978) 341-0036.

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